

## BNL Researchers Patent Anticoagulant

D-phenylalanyl-prolyl-arginyl-chloromethyl ketone was born in a Biology laboratory at BNL. This synthetic anticoagulant is the subject of patent 4,318,904, which was granted in March to the compound's creators, Elliott N. Shaw and Charles A. Kettner.

About five years ago, when Shaw was head of the Biology Department and Kettner was a post-doctoral can-

didate there, the two biochemists were studying drug design and proteolytic enzymes. These enzymes are catalysts essential for protein metabolism in cells throughout the body. Kettner and Shaw wanted to design a drug that would deactivate a specific enzyme without affecting any others. As the focus of their DOE-funded study, they chose thrombin, an enzyme which induces clotting.

Under normal circumstances, clotting — like other life processes — is beneficial and taken for granted. But when that process becomes life threatening, or when it must be controlled for laboratory work, inhibiting thrombin becomes critical. This is the specific problem Kettner and Shaw addressed; their patented compound is their specific solution.

Shaw describes this anticoagulant as "a magic bullet that goes right to the active center of thrombin and forms a permanent bond there, making something new and inactive out of the thrombin and permanently knocking it out."

This effect has been shown in animal tests devised by Dr. Collen of the University of Leuven in Belgium. First, Collen subjected rabbits to a huge dose of thrombin, simulating a lethal condition called disseminated coagulation, where clotting occurs internally with excessive rapidity. When this new inhibitor was used, it blocked the excess enzyme and saved the rabbits' lives.

Collen's findings indicate that this compound would probably also be effective in treating accident victims, preventing further damage by limiting blood clots. However, because it is necessary to perform many tests on

new drugs, to rule out any possible negative effects, it will probably be some time before this medication is used directly on human beings.

Although not yet approved as a medication, this compound is already being used in other ways. When out-of-date blood is fractionated to isolate still useful enzymes, this anticoagulant helps the blood remain fluid. All over the world, places like the New York Blood Center are using samples provided by Shaw to facilitate blood processing.

This compound can also be used as a diagnostic tool to measure the level of thrombin in the blood. By comparing the difference in color reactions before and after this inhibitor is added to a blood sample, it is possible to determine how much thrombin was originally there. With this sort of work already in progress, Shaw is in communication with Calbiochem-Behring, a California-based company which is manufacturing this compound and about to put it on the market as a research tool.

Since completing basic research on the compound, Kettner has become a chemist with the DuPont Company in Wilmington, Delaware. At BNL, Shaw is still working on drug design. "I would like to make them longer-acting," he says, "This one doesn't stay around in the blood very long. As it is now, it's ideal for a crisis situation or for one time use. But if I could increase its longevity, I could carry those techniques over to similar drugs."

By similar drugs, Shaw means other medications which form a bond with enzymes to block their activity. Essentially, this is what chemotherapy is all about. In fact, with additional funding from the American Cancer Society, Shaw is applying this process to other proteolytic enzymes that are thought to help cancer cells metastasize, or travel, around the body. "If you could stop cancer cells from metastasizing, you might have a way to prevent cancer from spreading," says Shaw. "This is really my major interest."

The compound patented by Shaw and Kettner may prove important as a stepping stone for future discoveries, but in the present it is already proving its worth as a valuable research tool and potentially life-saving drug.

— Anita Cohen

—Photos this page by Humphrey



John McTague

## McTague Heads NSLS Division

After 11 years on the faculty of the University of California at Los Angeles, John P. McTague has come to Brookhaven to head the recently organized National Synchrotron Light Source Division.

McTague, a former professor of chemistry, is no stranger to the Light Source or to Brookhaven itself. For the last few years he has been on the Program Advisory Committee of the NSLS and has held guest and research collaborator appointments in the Physics Department since 1974. A physical chemist, McTague has been actively involved in synchrotron radiation experiments at the DESY synchrotron, near Hamburg, Germany.

As to the way things stand at BNL's synchrotron, McTague says "the UV ring will be providing photons to experimenters within the next several weeks, and then we will devote a major effort toward getting the X-ray ring operational. It is an exciting prospect to participate in what will be the foremost condensed matter research facility in the world."

John McTague spent his undergraduate years at Georgetown University, and received his Ph.D. in physical chemistry from Brown University in 1965. He was a member of the technical staff of the Science Center at North American Rockwell Corporation until 1970 when he joined the Chemistry Department at UCLA. He has held visiting appointments at the Danish Atomic Energy Commission

(Continued on page 2)



Elliott N. Shaw

## Tactical Training For Lab Security

From Tuesday through Friday next week, the crack of gunfire will be heard coming from the end of Brookhaven Avenue. Sirens may sound at intervals and a number of Suffolk County police vehicles will be seen on site.

For those four days, the Igloo area and surrounding woods will turn into a "battleground" to accommodate tactical training exercises for the BNL Police, representatives of the FBI and of the Suffolk County Police.

They will be taking part in a simulated small force engagement developed by Sandia Laboratories for DOE. Because of the proliferation of terrorist activity world wide, DOE has urged and funded such training for security personnel at all DOE labs.

Sandia has based its training program on the Multiple Integrated Laser Engagement System (MILES) developed for the U. S. Army. As described in Sandia Technology, "the basic elements of the MILES system are a laser transmitter mounted on a weapon and optical detectors mounted on a target. The laser transmitter sends out optically coded laser light pulses. Detectors on the target warn of near misses with intermittent audio signals. Direct hits sound continuous audio signals." Sandia has modified some aspects of this system to be more applicable to DOE requirements.

At Brookhaven the equipment to be used will include automatic rifles, shotguns and hand guns. Live ammunition will not be allowed on the "battleground." The drill weapons take only blanks and, to prevent any pos-

sible accident, regular weapons belonging to the police will be locked up while they are participating in the exercises.

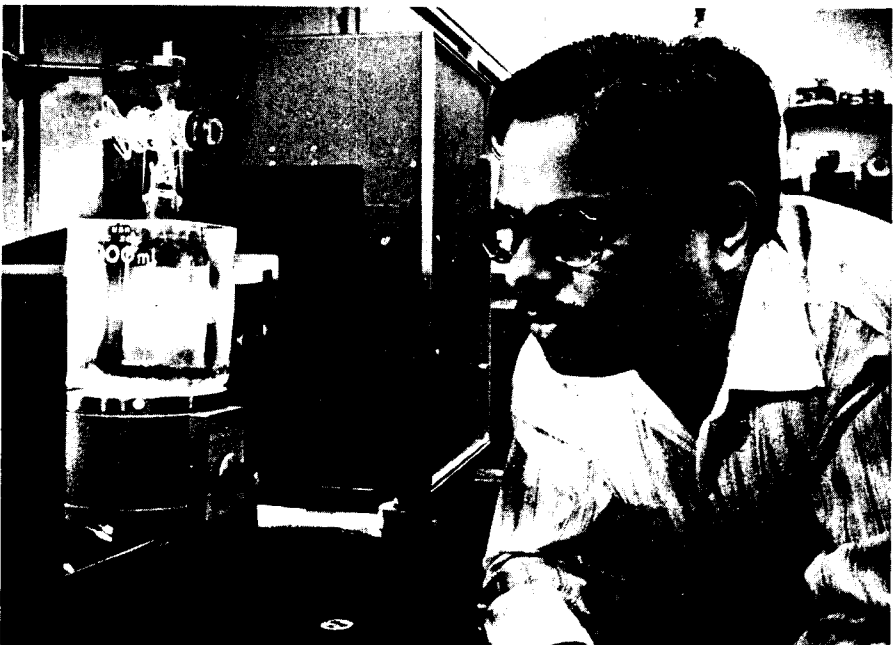
The field maneuvers, which will take place twice a day, will be preceded by a lecture, and followed by a critical review. The Lab police will take turns participating in the program on their days off, so that the regular complement of officers will be on duty at BNL.

Employees not involved in the drills are asked to stay away from the training area. Official observers will be on hand, but sightseers will not be welcome.

After this initial four-day training period when Sandia personnel will conduct the exercises, refresher courses will be held annually. At that time, Sandia will send the equipment to the Lab, but BNL personnel will do the training.

## Books For Review

On or about the first day of each month, the Research Library receives a new shipment of books for possible acquisition. Members of the Lab's scientific staff are invited to review these "approval" books at the Research Library and make recommendations regarding their purchase. Each shipment covers a variety of subjects and is available for review for one month. Any books not chosen for purchase are then returned to the vendor.



C.V. Krishnan looking at a photolyzer, an instrument used in photo-reduction of water.

(See "Chemistry Around The Clock" page 2.)

## Reports Available

The following reports are now available to the Laboratory staff and to affiliates of DOE, AUI and NRC. Others may purchase the report(s) from the National Technical Information Service, U.S. Dept. of Commerce, 5285 Port Royal Rd., Springfield, VA 22161. Staff members should call Ext. 5068.

### BNL 51208

A Long Range Assessment of R&D Policy for Gas-Related Conversion Technologies and Unconventional Natural Gas Resources. A.S. Kydes and J. Rabinowitz

### BNL 51314

Situation Report for Petroleum Exporting Countries. A. Hermelee, J. D'Acerno, M. Beller, T.A. Smith

### BNL 51321

Flame-Retention Head Burner Efficiency Test Results and Analysis. Space Heating Equipment Test Program. R.J. McDonald and R.F. Krajewski

### BNL 51330

Analysis of Gasoline Supply for the United States During the 1979 Shortage. J. D'Acerno, M. Beller, A. Hermelee

### BNL-NCS-51346

Ni Elemental Neutron Induced Reaction Cross-Section Evaluation. M. Divadeenam

### BNL-NCS-51363

Vols. I & II  
Proceedings of the Conference on Nuclear Data Evaluation Methods and Procedures. Held at BNL Sept. 22-25, 1980. B.A. Magurno, S. Pearlstein — Editors

### BNL-NCS-51364

Minutes of the Fifth Annual Meeting of the Panel on Reference Nuclear Data. T.W. Burrows, H.H. Coyne, D.S. Brenner — Editors

### NUREG/CR-2040

BNL-NUREG-51367  
A Study of the Implications of Applying Quantitative Risk Criteria in the Licensing of Nuclear Power Plants in the United States. S. Mitra, R. Hall, A. Coppola

### BNL 51369

Hydride Chemical Compressor Phase 1. Final Report. F.E. Lynch, R.A. Nye, P.P. Turillon

### BNL 51370

Investigation of the Zinc Electrode Reaction. Annual Report Oct. 1, 1979 — Sept. 30, 1980. J. McBreen, et al

### BNL 51374

Advanced Alkaline Electrolysis Cell Development Task 1 Summary Report. Advanced Component Testing in the Applied Research Industrial Electrolysis System (ARIES). J.N. Murray, M.R. Yaffe

### NUREG/CR-2066

BNL-NUREG-51376  
Cooling of Core Debris and the Impact on Containment Pressure. J.W. Yang

### BNL 51378

MAP3S/RAINE Emissions Inventory Progress Report. C.N. Benkovitz

### BNL 51379

Microbial Activity in Acid and Acidified Forest Soils. A.J. Francis, D. Olson, R. Bernatsky

### NUREG/CR-2124

BNL-NUREG-51383  
Evaluation of Isotope Migration — Land Burial. Water Chemistry at Commercially Operated Low-Level Radioactive Waste Disposal Sites. Quarterly Progress Report Oct.—Dec. 1980. K.S. Czyscinski, R.F. Pietrzak, A.J. Weiss

### BNL 51388

Neutron Capture Cross Section Standards for BNL 325 Fourth Edition. N.E. Holden

### BNL 51389

Impacts of Federal Clean Air Law on District Heating Opportunities. M.S. Baram and R. Miyares

### BNL 51394

The Comparative Economic Performance of Selected Passive Solar Heating and Cooling Technologies. W. Rutter

### BNL 51396

Water Analysis Methods at the Integrated Lake Watershed Acidification Study Laboratory, Raquette Lake, N.Y. J. Tokos

### BNL 51397

Engineering Evaluation of the Use of the TIMERLINE Condensing Economizer for Particulate Collection. T. Butcher and H. Serry

### NUREG/CR-2161

BNL-NUREG-51402  
Advanced Reactor Safety Research Division. Quarterly Progress Report Jan. 1 — Mar. 31, 1981. A.J. Romano, R.J. Cerbone, T. Ginsberg, J.G. Guppy, C. Sastre

## Chemistry Around The Clock

C.V. Krishnan usually gets to his laboratory in the Chemistry Department at about two o'clock in the afternoon. But with weekend work and extra time during the summer months, he averages about 50 hours of work a week.

Obviously, he's putting in the hours. Why the odd schedule?

Krishnan is a full-time chemistry teacher at East Islip High School. He is so dedicated to research that he manages to juggle what adds up to two full-time jobs. And he does a fine job of both.

The Chemical Manufacturers Association recently named Krishnan as one of the recipients of the 1982 High School Regional Chemistry Teacher Catalyst Awards, given annually to distinguished teachers across the United States and Canada. Honoring them for their teaching excellence and contributions to chemical education, the award consists of \$500, a citation and a medal.

Krishnan has been teaching chemistry to high school students for twelve years. Many of his young charges have taken prizes at the Long Island Science Congress and gone on to the state competition.

Krishnan's research at BNL is in collaboration with Norman Sutin, on photo reduction of water. They met when Krishnan participated in a BNL-hosted program to introduce high school teachers to latest developments in science, which would aid them in improving science curricula at their schools.

Sutin's work intrigued Krishnan, who came back later to ask about research collaboration. Says Sutin, "Largely through his industry, we've developed a system capable of photo-generating hydrogen from water, with the highest yield of hydrogen for a homogeneous system yet reported."

Their work together may lead to making hydrogen a viable alternative fuel, especially considering that three-fourths of the earth is covered with water, and that one molecule of water is potentially capable of yielding one molecule of hydrogen. Their method, first developed by Sutin, involves making unstable metal compounds photochemically (ultimately using sunlight), and then splitting water into hydrogen and oxygen. Krishnan says they are working on understanding side reactions that slow down the process, making it less efficient and therefore not yet cost-effective.

Holding a Ph.D. in chemistry from the University of Bombay in India,

Krishnan says he never lost his "inclination to do research," which grew out of his thesis work in physical chemistry. In 23 years of research, he has published 33 papers and has been a contributing author of four books on advanced research in solution chemistry.

Besides the most recent award by the Chemical Manufacturers Association, he has won numerous others, including two consecutive years of the Science Teachers Association of New York State Science Congress Teacher Award.

Before starting to work at BNL in 1979 as a research collaborator, Krishnan did research at SUNY/Stony Brook for twelve years on solution thermodynamics. He is still an adjunct associate professor in the Department of Chemistry at Stony Brook.

## McTague

(Cont'd)

Research Establishment, at Bell Laboratories and at Los Alamos National Laboratory.

During the 1970's he was also an Alfred P. Sloan Research Fellow, a NATO Senior Fellow and received a John Simon Guggenheim Memorial Fellowship. His awards include the California Section Award, American Chemical Society, 1975; the Herbert Newby McCoy Award, UCLA Chemistry Department, 1979; and the Glenn Seaborg Research Award, Alpha Chi Sigma, UCLA, 1979.

McTague will keep his teaching interests alive at Columbia University where he has been appointed an adjunct professor.

At present his spare time is taken up with house hunting and he hopes to have something by June when his wife and children head east at the end of the school year.

## I.B.E.W. Meeting

Local 2230, I.B.E.W. will hold its regular monthly meeting on April 22, at 6 p.m. in the Knights of Columbus Hall, Railroad Ave., Patchogue. There will also be an afternoon meeting at 2 p.m. for shift workers in the Union office at 31 Oak Street, Patchogue. On the agenda will be regular business, committee reports and the President's report.



Herschel Rabitz

## Sensitivity Tools

Prof. Herschel Rabitz, Chemistry Department, Princeton University, will present a seminar entitled "Sensitivity Tools for Model Analysis and Validation" on Thursday, April 22, at 11 a.m. in the Hamilton Seminar Room. The seminar is sponsored jointly by the Chemistry Department and the Department of Energy and Environment.

Many problems can be viewed from an output/input perspective, in which the output information typically consists of appropriate system observables and the input is often represented by a set of constants or parameters defining the system. Sensitivity analysis aims to probe the relation between input and output variables — a role frequently obscured in any given system — by examining a variety of sensitivity gradients or coefficients using multi-variable calculus. The talk will review approaches to sensitivity analysis, including numerical methodology, and general types of questions the technique can address.

## Broker To Speak At WIS Dinner

Mr. E. Madden from Merrill, Lynch, Pierce, Fenner, & Smith, Inc. will talk on "Investment for a Changing Economy" at the Women in Science dinner meeting on Tuesday, April 20 in Berkner Hall, Room A.

Dinner will begin at 5:15 p.m. and Mr. Madden will speak at about 6 p.m. Everyone is invited to attend.

Make dinner reservations by sending a check for \$7.50, payable to BNL WIS, to Ellen Gannon, Building 801, by April 16.

## SEEK Students On Site



Doug Humphrey

These students from City College of New York were at the Laboratory April 5-8 participating in the sixth SEEK Mini-Semester. SEEK, an acronym for Search for Education Elevation & Knowledge, is the name of a program established by CCNY to provide students with an overview of engineering and technical pursuits at a major institution. Working with CCNY, BNL's Office of Affirmative Action prepared a four-day agenda during which the students toured most of the Lab's facilities and attended seminars on such topics as physics, mechanical engineering, electronics and applied math.

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Letters  
To The Editor

To The Editor:

I arrived from England at the end of February to take up a post-doctoral position in Dr. Betsy Sutherland's lab in the Biology Department. As I had never been to your country before, I was anxious to see the sights, especially New York City.

Unfortunately, my first visit to the Big Apple, ended disastrously when I was mugged near Times Square. Despite my cries for assistance, the numerous passers-by did nothing, and I ended up minus my wristwatch and feeling somewhat shaken. Under the circumstances, I was comparatively lucky as I was not physically injured.

The story had a happy ending, however, when I was presented with a new watch by the members of Dr. Sutherland's group, who had all felt awful about my experience. I want to express my gratitude for that lovely gesture to all involved and especially to Inan Feng and Alice Shih who masterminded the operation.

There may be villains in all societies, but there are plenty of warm hearts here.

— Tony Blackett

Seedling Disease

Gardeners who start their own plants from seeds must watch out for damping-off, warns the Cooperative Extension Association of Suffolk County. This fungus disease causes the stems of seedlings to rot off at soil level within 24 hours after the seedlings have been set out in the garden.

Slow-germinating seeds sown in coldframes, hotbeds or started indoors are most susceptible. This disease takes its toll when humidity is high, soil is excessively moist and ventilation is poor.

Seeds sown in vermiculite, perlite or peat moss will fare much better since these materials are generally free of fungus spores.

Good management of water and temperature is the best protection against damping-off. Water plants in the morning so the soil surface is dry by night. During a period of cloudy weather, water every other day. However, don't let the soil dry out.

Many seeds are treated with a fungicide to help control this problem. A statement to this effect will appear on the packet.

Arrivals & Departures

Arrivals	
Graham C. Smith	Instrumentation
Departures	
This list includes all employees who have terminated from the Laboratory, including retirees.	
John T. Eriksen	Plant Engrg.
Michael W. Fanelli	Nuclear Energy
Patricia A. Knisely	Accelerator

From Mao To Mozart

The Academy Award-winning film "From Mao to Mozart: Isaac Stern in China" will be shown at Berkner Hall on Friday, April 23, beginning at 8:30 p.m.

The film is a documentary of a trip that the internationally renowned violinist Isaac Stern made to the People's Republic of China several years ago. It is the first full-length film made by Americans in China since the Cultural Revolution.

Early in 1979, Isaac Stern accepted an invitation from Foreign Minister Huang Hua to visit China in the summer of 1979 as an official guest of the government. The objective of the trip was to meet with the people, to meet with fellow musicians, give concerts, master classes, all within the framework of the concept, as Mr. Stern said, "first as musicians, then as friends."

A small group of Americans who were interested in China believed that this first visit by a major solo musical artist of world stature would mark a turning point in the history of cultural relations between China and the West, and they thought it should be documented for future generations. Receiving the approval of both Isaac Stern and the Chinese government to film a non-profit documentary film, the group assembled a production staff to film Isaac Stern, with his accompa-



Isaac Stern in China

nist, the well-known young American pianist David Golub, during their month-long visit in China.

In 1981, the film won an Oscar for the best feature-length documentary film of the year. At the same time, it opened in New York, Boston, Los Angeles, and San Francisco to wide critical acclaim. It has been hailed as

"A fascinating and poignant memento".... "A travelogue, a portrait, a social document, a concert souvenir and pedagogical treatise, beautifully photographed and sensitively edited."

Tickets will be available at the door. General admission is \$4; students and senior citizens, \$3; and those under 18, \$2.

Property Passes

To do Laboratory work off site, an employee may need certain government equipment. In such an instance, a property pass is required.

A property pass describes the equipment and states the expected return date. It is prepared and approved by appropriate personnel in the department or division lending the property. Copies are distributed to the borrower, the lending organization and the Property Management section of Supply & Materiel, which will conduct a follow-up to ensure the property is returned within 30 days. The lending organization should notify S&M when the equipment is returned.

When property will be off site for more than 30 days, a loan agreement should be processed in lieu of a property pass.

Aerobic Dancing

The Aerobic Dance Club announces a ten-week, 20-lesson session to begin Tuesday, April 27. The session will cost \$50 (\$2.50/lesson) and will be held at the Brookhaven Center on Tuesdays and Thursdays from 5:15 to 6:15 p.m.

Aerobic dancing is designed to exercise the entire body by means of vigorous dance/exercise to music. It is said to be an enjoyable way to develop muscle tone and strengthen the cardiovascular system. Anyone interested in slimming down and shaping up should contact Jayne Cutt, Ext. 7597, or Pat Carr, Ext. 3636, by Friday, April 23. Space is limited.

Bowling

**White League**

The Gropers remain in first followed by the Flounders and the Portsiders. J. Griffin had a fantastic evening with games of 268/237/246 for a 751 scratch series. J. Ferrante 216, B. Belligan 203, N. Erickson 195, S. Smith 191, K. Conkling 183, T. Erickson converted the 4/7/10 split.

**Purple League**

The Good Guys rolled an 867 gross game, J. Mayeski 206/219/201 for a 626 scratch, E. Franz 219, E. Meier 200, A. Pinelli 201, J. Pinelli 186, M. Milian 192, C. MacDougall 194, E. Shute converted the 4/7/10.

Theater Group

If you are interested in any aspect of the theater — as audience, performer, or backstage crew — why not come to the next meeting of the Theater Group, on Thursday, April 22 at 8 p.m. in the Berkner Hall auditorium?

On the agenda are a discussion of future activities (including BERA productions and theater parties to see performances by other companies) and readings of scenes from some plays of possible interest. Anyone with a favorite play to suggest should call Kurt Fuchel (Ext. 4116) or bring copies of the play to the meeting.

If you are unable to attend this meeting, but would like to be added to the mailing list for advance notice of Theater Group activities, call Penny Baggett (Ext. 5154).

Cafeteria Menu  
Week Ending April 23, 1982

<b>Monday, April 19</b>	
Cream of mushroom soup	(cup) .60
	(bowl) .70
Western omelet & hash browns	1.70
Beef liver & onions & 1 veg.	1.70
Hot Deli: Italian meatball hero	1.85
<b>Tuesday, April 20</b>	
Beef vegetable soup	(cup) .55
	(bowl) .65
BBQ spare ribs & 1 veg.	1.80
Salisbury steak & 1 veg.	1.75
Hot Deli: Roasted top round of beef	(bread) 1.75
	(roll) 1.85
<b>Wednesday, April 21</b>	
Turkey okra Creole	(cup) .55
	(bowl) .65
Ham and broccoli crepes & 1 veg	1.70
Turkey chow mein on rice	1.70
Hot Deli: Sandwich steak w/pepper & onions	(bread) 1.80
	(roll) 1.90
<b>Thursday, April 22</b>	
Beef barley soup	(cup) .55
	(bowl) .65
Chicken pattie parmesan & 1 veg. w/spaghetti	1.75
Seafood platter	1.95
Hot Deli: Corned beef on rye	1.75
<b>Friday, April 23</b>	
Clam and celery bisque	(cup) .60
	(bowl) .70
Chinese pepper steak on noodles	1.85
Southern fried chicken & 1 veg.	1.75
Hot Deli: Bread fish fillet hero	1.85
<b>Salad Bar — 11:30 a.m.-12:30 p.m., Tuesday, Wednesday &amp; Thursday \$1.85 per plate</b>	

Diners Note

The Cafeteria will be closed on Saturday, April 17. On that day, Snack Bar Service will be available from 9 a.m. to 2 p.m. at the Brookhaven Center.

**Service Awards**

The following employees received service award certificates during the month of March:

<b>Thirty-Five Years</b>	
Arnold S. Benson	Plant Engrg.
Phillip L. Borzi	S&M
Hugh C. Campbell	Reactor
William E. Farrell	Plant Engrg.
Charles Gargliardo	Staff Serv.
Anthony J. Guacci	Staff Serv.
Richard N. Hill	Cont. & Pro.
Woodrow W. Hobson	S&M
Winfield Lewis, Jr.	En. & Env.
Walter J. Milian	Plant Engrg.
Sidney M. Raynor	Plant Engrg.
Joseph Rhodes	S&EP
Frederick Strier	S&EP
Kenneth W. Swezey	S&M
John G. Zahra	S&M
<b>Thirty Years</b>	
Robert F. Doering	En. & Env.
Robert A. Feindt	Medical
Gilbert S. Raynor	En. & Env.
<b>Twenty-Five Years</b>	
Carl Cantera	Physics
Louis J. Nicolosi	Medical
Lorraine M. Tassinari	Medical
<b>Twenty Years</b>	
Jack J. Fontana	En. & Env.
Walter Chornoma	Plant Engrg.
Ellis S. Tremski	Plant Engrg.
Marion T. Dorfer	Staff Services
Alfred D. Roebuck	Physics
Norman R. Franklin	Accel.
Joseph D. Haeg	Cont. & Proc.
Earl L. Jacobs	Accel.
Frank C. Merkert	Physics
Raymond J. Archbold	S&EP
Andrew C. Ruzicka	Biology
James Cardinal	Plant Engrg.
John J. Mazzeo	Accel.
Casimir Szpulecki	Cen. Shops
<b>Ten Years</b>	
Paul A. Akins	Plant Engrg.
Henry T. Floege	Central Shops
Eileen H. Kosloski	Reactor
Collos C. Lamb	S&M
George Rabinowitz	Accel.



## Classified Advertisements

### Placement Notices

The Laboratory's placement policy is to select the best-qualified candidate for an available position, with consideration given to candidates in the following order of priority: (1) present employees within the department, with preference to those within the immediate work group; (2) present employees within the Laboratory as a whole; and (3) outside applicants. In keeping with the Affirmative Action plan, selection decisions are made without regard to age, race, color, religion, national origin, sex, handicap or veteran status.

Each week, the Personnel Office lists new personnel placement requisitions. The purpose of these listings is, first, to provide open placement information on all non-scientific staff positions; second, to give employees an opportunity to request consideration for themselves through Personnel; and, finally, for general recruiting purposes. Because of the priority preference policy stated above, each listing does not necessarily represent an opportunity for all candidates. As a guide to readers, the listings are grouped according to the anticipated area of recruitment.

Except when operational needs require otherwise, positions will remain open for one week following publication date.

For further information regarding a placement listing, contact the Personnel Placement Supervisor, Ext. 2882.

The vacancies listed below have been exempted by the Director's Office from the current freeze on open requisitions.

**LABORATORY RECRUITMENT:** Opportunities for present Laboratory employees.

1678. MAIL CLERK - (5/24/82 to 9/3/82) Staff Services Division.

1679. RESIDENCE CUSTODIAN - (3 positions for period 5/17/82 - 10/15/82) Staff Services Division.

1680. SAFETY TRAINING SPECIALIST - Requires excellent oral communication skills and a background in industrial safety techniques, such as first aid, materials handling, fire, construction, hazardous materials and loss control. Experience presenting safety training programs desirable. Individual will conduct general safety orientation programs as well as specialized departmental safety awareness sessions. BS or equivalent relevant experience required. Safety and Environmental Protection Division.

**OPEN RECRUITMENT:** Opportunities for present Laboratory employees and outside applicants.

1681. ENVIRONMENTAL ASSOCIATE - Requires MS in environmental sciences or equivalent. Experience in the area of environmental monitoring and assessment with a knowledge of environmental regulations is required. Demonstrated ability to prepare technical reports and to deal effectively with management and regulatory authorities is essential. Ability and interest in assisting in ecological studies concerning the effects of Laboratory operations on aquatic, terrestrial and ground-water environments is desirable. Safety and Environmental Protection Division.

### Autos & Auto Supplies

78 HONDA - 400cc, well maint., 6,000 orig. mi., some extras, must see, \$1,000. Ext. 2926.

79 HONDA HAWK - 400cc, almost new, \$1,400. 588-0805 eves.

TIRE RIMS - new, Ford 5-hole, set of five, make offer. Tom, Ext. 4671 or 924-6073.

73 CADILLAC - a/c, p/s, p/b, stereo, decent cond., \$500. 281-6759.

75 YAMAHA - 250RD, Ex-Con rack, sissy bar, 4,500 mi., never been out in rain, \$300. Ext. 4113.

74 HONDA CIVIC - rebuilt eng., excel. cond., new brakes, exhaust system, \$2,200. Sharon, Ext. 3755.

68 OLDSMOBILE 88 - 8 cyl, 4 dr sedan, runs well, \$450. Jeanne, Ext. 2364 days or 281-6776 eves.

VOLKS BEETLE TRAILER HITCH - heavy duty, \$20; Beetle rims, 2 ea., 4-hole, \$5/ea. Gene, Ext. 3254 or 363-9527.

70 MONTE CARLO - vinyl top, new brakes, bearings, fly wheel, tires, 40K mi. on '75 350 eng. Bob, 924-6018.

67 CHEVELLE - convertible, new top, exhaust, 10K mi. on rebuilt 283 eng., 4 spd trans. Bob, 924-6018.

75 HONDA - 200cc, good cond., low mi., fairing, sissy bar, \$600. Kristin, 744-6287 after 7 p.m.

80 SUZUKI - GS1000L, shaft drive, luggage rack, many extras, warranty, \$3,000. Ext. 7745 or 981-9474.

72 OLDS - a/c, good running cond., asking \$600. Frank, Ext. 4113 or 399-1307.

77 TRUCK CAMPER - 11' Aristocrat, loaded, mint cond., must sell. Mike, 878-1325.

REPAIR MANUAL - for 70-72 Dodge van, \$8. John, Ext. 3292.

70 VOLKS KARMAN GHIA - convertible, canary yellow, stereo, \$2,150. 924-4284 after 5:30 p.m.

75 OLDS CUTLASS SUPREME - spt. coupe, auto, 260 V8, stereo/cassette, powder blue/white interior, excel. Ext. 3381 or 286-1024.

73 VW BUS - auto, am/fm stereo, good eng., very clean body, no rust. Ext. 7699 or 821-1435.

72 STARCRAFT POP-UP TRAILER - hardtop, stove, ice box, furnace, sleeps 6, excel., \$1,300. 472-0339.

73 PINTO WAGON - 4 spd., runs well, \$375. Alan, Ext. 2928 days or 821-1389 eves. & weekends.

76 MAZDA RX3 COUPE - 50K, sunroof, mags, Mulholland spoilers, more, outstanding, \$3,500. Dave, Ext. 5211 or 475-2626.

74 DODGE DART - custom 4 dr., auto., front disc brakes, 6 cyl., reg. gas, power steering, \$900. Ext. 7683.

72 CHEVY - 8' bed, radio, heater, heavy duty suspension, 8 ply tires, rear, \$1,800. Bob, 475-4382.

78 TRANS AM - 6.6 LT, 4 spd., p/s, p/b, am/fm 8-track, t-top, gold, beige interior, new brakes & exhaust, \$5,500. Roy, Ext. 4664 or 744-8779.

80 HATCHBACK FIESTA GHIA - flip-up roof, 13,000 mi., mint cond. 286-1046.

80 SUZUKI - 400 GX, excel. cond., maintained under warranty, low mi., \$1,000 firm. Ext. 2709 or 751-0182.

TOYOTA - 1600cc engine, transmission, starter, alternator, good for parts or rebuilding, \$100. Ext. 4098.

76 VW DASHER - 4 dr., a/t, am/fm, \$2,800 or best offer. Arnie, Ext. 2606.

77 HONDA MOTORCYCLE - Super Sport, 750cc, clean, runs excel., extras. Jim, Ext. 4095.

79 CHEVETTE - 4 dr., 4 spd., 4 cyl., economical, new steel radials, am/fm, \$3,150. 473-2473 after 4/17.

TIRES - 2 ea., GR78X15, Uniroyal, steel belted radial w/w, more than orig. tread left, \$25/ea. Larry, Ext. 4821 or 727-1412.

77 TOYOTA CHINOOK - micro-mini motorhome, fully equipped, sleeps 4, 55,000 mi., 18-20 mpg, many extras. Make offer. Sam, Ext. 7205.

70 MASSEY FERGSON BACKHOE - gas, excel. cond., \$5,000. 589-9103 eves.

### Boats & Marine Supplies

16' ALUM. MIRROR CRAFT - "V" hull, 40 HP, elec. start, Evinrude eng., MFG trailer, \$900. 924-6751 eves.

12' WOOD BOAT - \$50. 281-6759 eves.

8' HYDROPLANE - excel. cond., \$100; diver's spear gun, new, never used, \$20. Rolf, Ext. 2768 or 286-2045 after 6 p.m.

18' GARVEY - clamming boat w/40 HP Johnson eng., both good cond., \$800. John, Ext. 3292 or Jeff, 286-1348.

16' GARVEY - clam boat, 60 HP outboard, plus many extras. Ext. 7148 or 363-2522 after 6:00 p.m.

22' CUDDY CABIN - w/trailer, fiberglass, V6 I/O, 75 hrs. on engine, many extras, asking \$3,500. Ext. 3935 or 325-0968.

ZINCS FOR BOATS - prop shaft, rudder, outdrive, Mercury, Volvo, OMC etc.

298-4089.

72 17' FLEETWING BOWRIDER - "V" Hull, Cox trailer, electric winch, excel., \$3,000 firm. 286-1008.

### Free

EASTER PUPPY - free to good home, house-broken, loves kids, Golden Retriever/Wirehair mix. Ext. 2083 or 929-3248.

WINDOW SCREENS - 8 ea., wooden frame w/molding, painted, approx. 28"x55". 473-1343.

### Yard Sales

THRIFT SALE - used clothing, housewares, books, toys, etc. Sayville Congregational Church, 131 Middle Rd., Sat. Apr. 24.

### Miscellaneous

WEDDING GOWN - w/slip, size 10, \$150; oil paintings & prints, framed, various sizes, European artist, \$10-\$125; Britannica Junior Encyclopedia, 1971 edition, plus 12" world globe, \$50. Leo, Ext. 4615 or 587-0870 after 6 p.m.

GARDEN AERATOR SPIKER - \$25; lawn roller, \$20; push lawn mower, \$25; American Holly, 3-5 ft., \$2/ft., U-dig; Alberta spruce, 1-3 ft., \$7/ft., I-dig; Hemlocks, \$3/ft., I-dig. John, 744-5867.

FREEZER - 8 cu. ft., Philco, like brand new. 281-2899.

OAK - unsplit, two felled trees, sectioned & debranched, you haul away, \$50. Jerry, Ext. 2198 or 744-4662.

FREEZER - Imperial, excel. cond., paid \$650, asking \$325. Chris, Ext. 7125 or 475-1706 after 5:30 p.m.

DINING ROOM SET - Early American, (2) leaf table, 6 chairs, hutch, \$350; (3) tables, chrome/-glass, \$40; sofa, black vinyl/chrome, \$40; bdrm dresser, chest of drawers, night table, \$200; pool liner, 18x36, never used, \$600. 281-6759 eves.

INFRARED SCOPE - w/mount, NiCad battery pack, \$295. Joe, Ext. 3954.

WHITE PORCELAIN KNOBS - cabinet hardware. Ext. 7154.

BLACK DIAMOND MINK STOLE - perf. cond., \$100. Paul, Ext. 7611 or 728-2223.

COAL STOVE - used one season, \$1,000 new, now \$500; child carrier for bike, Sears model, \$8; wooden swing, \$8. 286-0422 after 6 p.m.

ROLLER SKATES - girl's, sz. 4-6; girl's skirt, sz. 10, suede. Ext. 3217.

METAL DETECTOR - Bounty Hunter model 840, VLF/TR, \$150. Frank Rumph, Ext. 4581 or 588-3565.

MATTRESS - new, twin (80" long), perf. for platform bed, \$50. Carole, Ext. 3362 or 924-4097.

FULL CANOPY BED - (2) dressers, (1) night table, \$175/set. 878-4259 after 4 p.m.

TUMBLING BARRELS - machine and (2) rubber lined barrels, 110 volt, \$100. Fred, Ext. 4407.

ROTO HOE - shredder/grinder, 5 HP, very good cond., used infrequently, \$200. 744-4611 eves.

COLOR TV - Sony, 17", needs repair, \$75. Ext. 3503.

TYPEWRITER - Olympic manual, standard office, heavy-duty machine, excel. cond., \$85. 581-6432.

BOX SPRING & MATTRESS - full size. 727-0661 after 5:00 p.m.

FREEZER - \$200; girl's 20" bike, \$45. Paul, Ext. 4156.

SEARS WASHER & DRYER - \$80; 18" portable dishwasher, \$100; typewriter, \$10; microscope, \$20; 28"x38" fireplace screen, \$18; 3 spd. man's bike, \$25; girl's bike, \$30. Jerry, Ext. 4061.

FULL SIZE BED - Sears, foam, w/frame, \$25. Tom, Ext. 7196 or 286-2505.

55 GALLON DRUM - never used, \$20; antique fruitwood china cabinet, \$500. Steve, Ext. 4636.

FURNITURE - contemp. liv. rm. couch, 2 chairs, excel. cond. Franz, 744-3235.

ATARI TAPES - Breakout, Laser Blast, hardly used, \$11/ea. or both for \$20. 744-8063 days.

VEGETABLE PLANTS - 6/pak, tomato, cucumber, pepper, lettuce; flower plants 4/pak, impatiens, marigolds, pansy, petunia, 7. Delivery end of April. Bldg. 902, 727-6818.

B.I.C. TURNTABLE - model 940, new Pickering cart., manual or auto, like new cond., \$40. Larry, Ext. 4821 or 727-1412.

VIVITAR 20 MM - wide angle lens, \$25; Yashinon 60 mm macro-lens, \$50; both fit 35 mm w/Pentax screw MT. 924-6021.

TOILET - bathroom basin, \$10/ea., (2) cast iron radiators, 8"x42"x25" high, \$10/ea. 744-5096.

EARLY AMERICAN BEDROOM SET - pine, by Lea, 1 chest, 1 dresser, 1 hutch/mirror, cannon ball bed, 2 night stands, \$800. 289-5382.

SEARS STEREO RECORD PLAYER - w/automatic changer, good for kids, \$60. Marian, Ext. 3552.

ROTOTILLER - 36" belt-driven, use with yard tractor, orig. \$350, never used, \$200; reel mower, needs motor, \$15. 929-4522.

LOVESEAT - country design, beige/blue/gold pattern, excel., \$150. Joe, Ext. 7961 or 878-2655 eves.

CLAM RAKE - w/handle sections, plus basket, \$28. 475-4394.

ELECTRONIC MEDICAL THERMOMETERS - brand new, \$10. Charlie, Ext. 3935/3942 or 325-0968.

LAMB JACKET - mouton brown, fits sizes 12-16, good cond., \$75. 475-0144 after 6 p.m.

ORCHESTRA TICKETS - (2) for Wed. matinee of American Ballet Theatre at the Met, 5/26/82. Jack, Ext. 4054.

ANTIQUE PLAYER PIANO - w/rolls, cabinet & bench, \$800. 286-3235.

SOLIGOR LENS - 70-220 mm w/macro f3.5 for Olympus, \$160. Ext. 2358 or 286-0497 eves.

GOLF CLUBS - 2 thru PW, 1,3,5 woods, \$100. Dino, Ext. 5279.

### Real Estate

*Real Estate advertised for sale or rent is available without regard for the race, color, creed or national origin of the applicant.*

### For Sale

N. PATCHOGUE - high ranch, 1/r, d/r, kit., 3 bdrms, 1 baths, large paneled fam. room, garage, util. room, prime area, walk to schools, assumable 6% mort., low taxes, \$39,000. Owner, 929-6984.

YAPHANK - 3 bdrm ranch, full heated bsmt, 2 large rooms for apt. or home bus., acre, beautiful location, 7% assumable mort., 4 mi. from Lab, \$39,000. 924-6895.

RIDGE - Leisure Village, 1 bdrm. retirement condominium, sunporch, all appl., assumable 8% mortgage, avail. immed., \$35,000. 744-6874.

MIDDLE ISLAND - 2-3 bdrm., 1/r, kitchen, bath, 1-car garage, on acre (North of Jericho), \$35,900. Joann, 744-2821 or 473-8670.

### For Rent

SETAUKET - 1 bdrm, 1/r, d/r, bath, kit., skylight, near public transportation, avail. June 8, \$350/mo. plus elec. 331-9349.

EAST MORICHES - 3 bdrm house, 1-car garage, near water, avail. 5/1, \$450/mo. Ed, 878-8979.

SOUND BEACH - furnished room, share apt., bath, kitchen, 1/r, walk to pvt. beach, phone, full size bed, parking, \$200/mo. incl. util. Roy, Ext. 4664 or 744-8779.

CORAM - 1 bdrm. apt. for sublet, May 5 - Sept. 5, \$370/mo. incl. all util. except elect. 928-8631.

### Car Pools

GREENLAWN RAILROAD STATION - need driver to join 3-person pool. Mark, Ext. 3258.

SOUTHAMPTON AREA - seeking 1 or 2 drivers, on time. Keelin, Ext. 2298 or Arlean, Ext. 2387.

RONKONKOMA - driver to join 3-person pool, LIE exits 59, 60, 61. Victor, Ext. 2395.

### Lost & Found

LOST - glove, right hand, beige & two-tone brown, near cafeteria and NE parking lot. Ext. 3602/3555.

LOST - blue/tan reversible jacket. Kurt, Ext. 4116.

FOUND - German Shepherd, not puppy but young, small, good looking and good natured, looking for good home, free. Betty, 281-5605.

### Wanted

APARTMENT - for two profess. women, 2 bdrm, Port Jefferson Village area. Joy, 265-4347.

SEWING MACHINE - Singer, good cond. 924-0581.

USED BICYCLE RACK - for car. Ext. 3217.

TENT TRAILER - for rent, 4 places, father & children, 4-6 weeks, August. George, Ext. 3636 or 759-1328 after 7 p.m.

GOOD HOME - for kittens, (2) calico, (1) b/w, litter trained, 6 wks. old, lovable, playful. 286-3970 eves.

JUNK BIKE - to make glider dolly, rear part of frame and one 20" wheel, cheap. Tom, Ext. 7196 or 286-2505.

ANTIQUE CAR OWNERS - willing to show cars at old time church fair in Setauket, June 19. Ext. 4329.

MOTORCYCLES - bent or broken, any age or cond. Kevin, 281-8031.

AMBITIOUS PERSON - \$200-\$300/mo., 6-8 hrs./wk. 698-5861 after 7:30 p.m.

LIVE-IN BABYSITTER - for 2 weeks, early June, three boys, 4, 9, 12 yrs. old, Patchogue, non-smoker please. Bob, Ext. 4317.

FLAPPER - for cowl induction hood for 1971 Chevelle SS. Ed, Ext. 4095 or 727-4925.

PORTABLE CASSETTE PLAYER - inexpensive, for use in field. Kathy, Ext. 3406 or Jim, 924-7665.

APT. TO RENT - preferably 1 bdrm., in Three Village area, from June 1st. 928-3653.

REFRIGERATOR - washer, dryer, beds, dining table and chairs, reasonably priced. Ext. 7114.

HOUSE - buy or rent, South Bellport or Brookhaven, 1/1/83 or before. Ext. 4388 or 286-5879.

### Services

*Services are listed as a courtesy to BNL employees. They are neither screened nor recommended by the Bulletin.*

ELECTRICAL WORK - reliable, experienced elect., work done at reasonable rates. 399-0864.

INCOME TAX - prepared by professional accountant, very reasonable rates. Bob, 286-5829 eves. and weekends.

ROTOTILLING - for any size lawn or garden, \$15/hr. Dave, Ext. 4289 or 288-3011.

FIRESIDE CHIMNEY SWEEPS - Spring special, \$10 off, fireplace, wood, coal & oil flues, dustless removal. Bill, 584-6425.

TAXES - prepared by tax consultant, your home or mine, reasonable. John, 732-2472.

TILE SETTERS - ceramic quarry tiles, no job too small, free estimates. E. Harris, 475-6460.

TJ'S AUTO COMPOUND & POLISHING - Tim, 281-7873 after 4:30 p.m.

EXPERT TYPING - reasonable rates. Pam, Ext. 7108 or 727-1887 after 5:30 p.m.

HOUSE SITTING - free, any period after May 20, very caring couple. V. Fthenakis, Ext. 2830 or 744-3822 eves.

HOME IMPROVEMENTS - vinyl & alum. siding, alum. trim, roofing, gutters & leaders, custom carpentry, free estimates. Charlie, 744-3160.

EXTERIOR HOUSE PAINTING - very reasonable rates. Ext. 4070 or 475-7272 or 472-3994.

HOUSECLEANING/BABYSITTING - also experienced mother's helper for summer months. Ext. 4070 or 472-3994.

WALLPAPERING - reasonable rates, no job too small. Ext. 4070 or 472-3994.

TILE & CEMENT WORK - reasonable rates, good work. John, Ext. 3292 or Donald, 281-8848.

PLUMBING & HEATING - Lab discount. John, 654-8189.

VERTICAL BLINDS - mini blinds, woven wood shades, discount prices, completely installed. Tony, 928-9241 eves.

AUTO REPAIRS - cars and light trucks, Lab discount. Dan, Ext. 4988 or 698-7322 after 6:00 p.m.

GYPSY MOTH SPRAYING - 399-0523 or 698-1423.

RESUMES - prepared, typed, printed, cover letters. Bill Polvent, 821-9081.

SMALL APPLIANCE REPAIRS - vacuums, heaters, all small appliances, No. Patchogue. 654-3900.

PROFESSIONAL INCOME TAX SERVICE - by experienced preparer, IRS enrolled, on-site preparation. Jack, Ext. 7942 or 864-2236.

LIMO SERVICE - luxury, chauffeur driven, now booking proms, weddings, airports, all occasions. Roy, Ext. 4664 or 744-8779.

HOUSE SITTING - free, caring, experienced, any period after May 28, plan your vacation now. J. Allentuck, Ext. 2412.

ASPHALT PAVING - and sealing. Bob, 475-4382.